REMARKS

Claims 1-20 are currently pending in this application. Claims 1-3 and 5 are currently amended. Claims 7-14 are newly added. No new matter has been introduced.

The Examiner objected to the abstract as containing legal phraseology. Applicants believe the Examiner's objection was based on the use of the word "means." Applicants did not use the work "means" in a legal sense in the abstract. Nevertheless, Applicants have amended the abstract to delete the work means.

The Examiner objected to the Declaration because the residence and complete post office address was not provided. Applicants respectfully traverse the Examiner's objection. Applicants timely filed an Application Data Sheet in accordance with 37 CFR 1.76. The Application Data Sheet supplies the residence and complete post office address for the Applicants. Accordingly, Applicants have complied with 37 CFR 1.63. See 37 CFR 1.63(c) ("unless such information is supplied on an application data sheet"). Applicants request that the Examiner withdraw this objection.

The Examiner rejected claims 1-6 under 35 U.S.C. Section 103(a) as rendered obvious by U.S. Patent No 5,991,787 issued to Abel et al., in view of U.S. Patent No. 6,792,441 issued to Jaber. Applicants respectfully traverse the Examiner's rejections.

As an initial matter, Abel is not an appropriate primary reference. The claims in the present application are directed to linearly scalable methods, systems and products for computing FFTs or inverse FFTs on multiprocessor systems. Abel is directed to reducing peak spectral error for a specific processor, namely an MMX^{TM} processor, using a specific instruction set and configuration. Abel reduces peak spectral error using rounding. Abel is not directed to linear scalability. Thus, the Examiner' assertion that Abel discloses "a linear scalable method" is incorrect. Further, Jaber is directed to specific hardware architectures, and is not directed to achieving linear scalability. Thus one would not be motivated to combine Abel and Jaber to obtain linear scalability in a multiprocessor system.

Turning to the language of the claims, claim 1 as amended recites, "[a] linear scalable method ... comprising ... computing an N-point FFT/IFFT using a first plurality of

butterfly computational stages, each stage in the first plurality of stages employing a plurality of butterfly operations having a first radix, wherein each of the butterfly operations in each stage in the first plurality of stages has a single, un-nested computation loop of the first radix." Claim 16 recites similar language. Neither Abel nor Jaber teach, suggest or motivate a linear scalable method comprising a first plurality of stages employing a plurality of butterfly operations having a first radix, wherein each of the butterfly operations in each stage in the first plurality of stages has a single, un-nested computation loop of the first radix, as recited. Accordingly, claims 1 and 16 are not rendered obvious by Abel, alone or in combination with Jaber. Claims 2 and 7-11 depend from claim 1 and claims 17-20 depend from claim 16, and are allowable at least by virtue of their dependencies.

Claim 3 as amended recites, "[a] linear scalable system ... comprising: means for computing a plurality of stages of an N-point FFT/IFFT using in each stage of the plurality of stages a plurality of butterfly operations, wherein each butterfly operation employs a single butterfly computation loop of a first radix and without employing nested loops." Neither Abel nor Jaber teach, suggest or motivate a linear scalable system comprising: means for computing a plurality of stages of an N-point FFT/IFFT using in each stage of the plurality of stages a plurality of butterfly operations, wherein each butterfly operation employs a single butterfly computation loop of a first radix and without employing nested loops, as recited. Accordingly, claim 3 is not rendered obvious by Abel, alone or in combination with Jabar. Claims 4 and 12-15 depend from claim 3, and are allowable at least by virtue of their dependencies.

Claim 5, as amended, recites, "[a] computer program product ... for computing a Fast Fourier Transform (FFT) or Inverse Fast Fourier transform (IFFT) in a multiprocessing system using a decimation in time linear scalable approach, comprising: computer readable program code means configured for ... implementing the remaining ($\log_2 N - 2$) stages using radix-2 butterfly operations, wherein each radix-2 butterfly operation employs a single radix-2 butterfly computation loop without employing nested loops." As mentioned above, neither Abel nor Jaber teach, suggest or motivate a linear scalable method. Thus, claim 5 is not rendered obvious by Abel, alone or in combination with Jaber. Claim 6 depends from claim 5 and is allowable at least by virtue of its dependency.
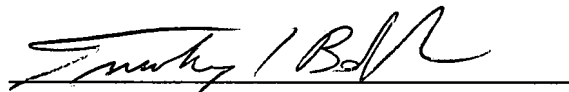
Accordingly, claims 1-20 are not rendered obvious by Abel, alone or in combination with Jaber.

The Director is authorized to charge any additional fees due by way of this Amendment, or credit any overpayment, to our Deposit Account No. 19-1090.

All of the claims remaining in the application are now clearly allowable. Favorable consideration and a Notice of Allowance are earnestly solicited.

Respectfully submitted,

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